## We claim:

- A scanner for a medical optical imaging device, comprising:
- a) an illumination source positioned to direct emitted light into a breast positioned below a support surface;
  - b) a plurality of detectors positioned to detect light emerging from the breast; and
  - c) a container disposed below said illumination source and said detectors adapted to trap light reflected from the breast.
  - 2. A scanner as in claim 1, wherein said container is cylindrical.
    - 3. A scanner as in claim 1, wherein:
  - a) said container includes an inside vertical wall surface; and
  - b) said inside vertical wall surface includes angular steps.
  - 4. A scanner as in claim 3, wherein said angular steps each includes a horizontal surface and an angular surface directed upwardly.
    - 5. A scanner as in claim 3, wherein said vertical wall surface is coated with low reflectivity material.
- 6. A scanner as in claim 5, wherein said low reflectivity
  25 material is flat black paint.

- 8. A scanner as in claim 7, wherein said inside bottom surface includes vertically directed honeycomb structure with openings directed upwardly.
- 9. A scanner as in claim 8, wherein said openings are hexagonal.
- 10. A scanner as in claim 7, wherein said inside bottom surface is coated with low-reflectivity material.
- 11. A scanner as in claim 10, wherein said material is flat black paint.
- 12. A scanner as in claim 1, and further comprising a side curtain disposed around the breast to exclude ambient light from the breast.
- 13. A scanner as in claim 12, wherein said side curtain is foldable vertically.
  - 14. A scanner as in claim 1, and further comprising:
    - a) a collimator to be disposed around the breast; and
    - b) said collimator including a slanted vertical
- 20 surface facing the breast.

- 15. A scanner as in claim 14, wherein said slanted vertical surface is disposed toward said container at about 15° from a vertical reference line.
  - 16. A scanner as in claim 14, wherein:
- a) said collimator includes a plurality of openings; and

- b) said openings include inside surfaces with grooves with slanted walls.
- 17. A scanner as in claim 16, wherein said grooves are made with screw threads.
- 5 18. A scanner for a medical optical imaging device, comprising:

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- a) an illumination source positioned to direct emitted light into a breast positioned below a support surface;
- b) a plurality of detectors positioned to detect light emerging from the breast; and
- c) a collimator having a plurality of holes associated with respective said plurality of detectors to restrict the field of view of said detectors, said holes including non-smooth inside surfaces.
- 19. A scanner as in claim 18, wherein said inside surfaces include grooves with slanted walls.
- 20. A scanner as in claim 18, wherein said inside surfaces are provided with screw threads.
- 21. A scanner as in claim 18, wherein said collimator includes a slanted vertical surface facing the breast.
  - 22. A scanner as in claim 21, wherein said slanted vertical surface is disposed toward said container at about 15° from a vertical reference line.
- 23. A scanner for a medical optical imaging device,25 comprising:
  - a) a scanning chamber including an illumination source

positioned to direct emitted light into a breast and a plurality of detectors positioned to detect light emerging from the breast; and

b) said scanning chamber including inside surfaces coated with low-reflectivity material.

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- 24. A scanner as in claim 23, wherein said material is flat black paint.
- 25. A scanner for a medical optical imaging device, comprising:
- a) a scanning chamber including an illumination source positioned to direct emitted light into a breast and a plurality of detectors positioned to detect light emerging from the breast; and
- b) said scanning chamber including slanted vertical surfaces to direct light from a horizontal plane.
  - 26. A scanner as in claim 25, wherein:
- a) said chamber includes a container disposed below said illumination source and said detectors:
- b) said container includes an inside vertical wall 20 surface; and
  - c) said inside vertical wall surface includes angular steps.
  - 27. A scanner as in claim 26, wherein said angular steps each includes a horizontal surface and an angular surface directed upwardly.

- 28. A scanner as in claim 26, wherein said container is cylindrical.
- 29. A scanner as in claim 25, wherein said chamber includes a side curtain disposed around the breast to exclude ambient light from the breast.
- 30. A scanner as in claim 29, wherein said side curtain is foldable vertically with slanted vertical surfaces.
- 31. A scanner for a medical optical imaging device, comprising:

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- a) an illumination source positioned to direct emitted light into a breast positioned below a support surface;
- b) a plurality of detectors positioned to detect light emerging from the breast; and
- c) a collimator having a plurality of holes associated with respective said plurality of detectors to restrict the field of view of said detectors, said holes including non-smooth inside surfaces.
- 32. A scanner as in claim 31, wherein said inside surfaces include grooves with slanted walls.
- 33. A scanner as in claim 31, wherein said inside surfaces are provided with screw threads.
  - 34. A scanner as in claim 31, wherein said collimator includes a slanted vertical surface facing the breast.
- 35. A scanner as in claim 34, wherein said slanted
  25 vertical surface is disposed toward said container at about 15° from a vertical reference line.